

Serial No. 09/966,460  
Amdt. dated August 22, 2003  
Reply to Office action of May 22, 2003

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-7 (Cancelled)

Claim 8 (Currently amended): The thermal sensor of claim ~~7-28~~ wherein the actuator further comprises a bi-metallic actuator having first and second physical states, the first state being structured to space the first movable contact away from the second contact, and the second state being structured to permit the first movable contact to contact the second contact.

Claim 9 (Cancelled)

Claim 10 (Currently amended): The thermal sensor of claim ~~9-28~~ wherein the electrical resistor is integral with the ~~single-pole, single-throw~~ switch.

Claim 11 (Cancelled)

Claim 12 (Currently amended): The thermal sensor of claim ~~11-28~~ wherein ~~one-two~~ or more of the plurality of ~~snap-action thermal~~-switches further comprises an electrical resistor coupled between the respective first and second contacts.

Claim 13 (Previously presented): A thermal sensor, comprising:

a single-pole, single-throw switch having first and second electrical contacts structured in a normally open configuration, the first contact being movable relative to the second contact;  
an actuator positioned relative to the first electrical contact and responsive to a sensed temperature for spacing the first movable contact away from the second contact, the actuator being a bi-metallic actuator having first and second physical states, the first state being structured to space the first movable contact away from the second contact, and the second state being structured to permit the first movable contact to contact the second contact;

an electrical resistor coupled between the first and second contacts and being integral with the single-pole, single-throw switch;

a wiring harness having the single-pole, single-throw switch with the electrical resistor electrically coupled thereto;

a plurality of snap-action thermal switches electrically coupled in parallel with the single-pole, single-throw switch, each of the plurality of snap-action thermal switches comprising:

a single-pole, single-throw switch having first and second electrical contacts structured in a normally open configuration, the first contact being movable relative to the second contact, and

an actuator positioned relative to the first electrical contact and responsive to a sensed temperature for spacing the first movable contact away from the second contact, and

wherein one or more of the plurality of snap-action thermal switches further comprises an electrical resistor coupled between the first and second contacts; and

a means for determining whether each of the plurality of snap-action thermal switches is electrically coupled to the wiring harness.

Claim 14 (Currently amended): ~~The thermal sensor of claim 12, further comprising~~ A thermal sensor, comprising:

a single-pole, single-throw switch having first and second electrical contacts structured in a normally open configuration, the first contact being movable relative to the second contact;

a bi-metallic actuator having first and second physical states, the first state being structured to space the first movable contact away from the second contact, and the second state being structured to permit the first movable contact to contact the second contact, the actuator positioned relative to the first electrical contact and responsive to a sensed temperature external to the switch for spacing the first movable contact away from the second contact;

an electrical resistor integral with the single-pole, single-throw switch and coupled in parallel with the first and second contacts and spaced away from the actuator;

a wiring harness having the single-pole, single-throw switch with the electrical resistor electrically coupled thereto;

a plurality of snap-action thermal switches electrically coupled in parallel with the single-pole, single-throw switch, each of the plurality of snap-action thermal switches comprising:

(i) a single-pole, single-throw switch having first and second electrical contacts structured in a normally open configuration, the first contact being movable relative to the second contact,

(ii) an actuator positioned relative to the first electrical contact and responsive to a sensed temperature for spacing the first movable contact away from the second contact, and

(iii) wherein one or more of the plurality of snap-action thermal switches further comprises an electrical resistor coupled between the first and second contacts; and

a means for determining for one or more of the plurality of snap-action thermal switches whether the first movable contact is spaced away from the second contact.

Claim 15 (Currently amended): The thermal sensor of claim 12 14, further comprising a logic circuit structured to determine ~~for one or more of the plurality of snap-action thermal switches~~ whether the electrical resistor is coupled to the wiring harness.

Claim 16 (Original): The thermal sensor of claim 15, further comprising a logic circuit structured to determine for one or more of the plurality of snap-action thermal switches whether the first movable contact is spaced away from the second contact.

Claims 17-27 (Cancelled)

Claim 28 (Previously presented): A thermal sensor, comprising:

a plurality of snap-action thermal switches each having first and second electrical contacts structured in a normally open configuration, each first contact being movable relative to the respective second contact, and an actuator positioned relative to each first electrical contact and responsive to different sensed temperatures for alternately positioning the respective first movable contact into contact with and spaced away from the respective second contact;

an electrical resistor coupled between the respective first and second contacts of one or more of the plurality of snap-action thermal switches;

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a wiring harness having the plurality of snap-action thermal switches electrically coupled thereto in parallel; and

a means for determining whether each of the plurality of snap-action thermal switches is electrically coupled to the wiring harness.